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AMENDMENTS TO THE CLAIMS

1-4. (cancelled).

5. (currently amended) A side pocket mandrel comprising:

a. an axially elongated tube having an enlarged diameter section

b. an inner volume formed in said enlarged diameter section

e. a filler material positioned in said inner volume, said filler material preventing cement from occupying a substantial volume within said inner volume while also allowing placement of a valve element, wherein the filler material comprises surface discontinuities that comprise transverse jet channels formed to induce fluid flow turbulence.

6. (amended) A side pocket mandrel as described by claim 10 ~~5~~ wherein said filler material comprises surface discontinuities formed to induce fluid flow turbulence.

7. (Original) A side pocket mandrel as described by claim 6 wherein said surface discontinuities comprise surface upsets.

8. (Original) A side pocket mandrel as described by claim 6 wherein said surface discontinuities comprise transverse jet channels.

9. (cancelled)

10. (currently amended) A side pocket mandrel comprising:

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a. an axially elongated tube having an enlarged diameter section

b. an inner volume formed in said enlarged diameter section

c. a filler material positioned in said inner volume, said filler material preventing cement from occupying a substantial volume within said inner volume while also allowing placement of a valve element, wherein said filler material comprises a plurality of independent increments and ~~A side pocket mandrel as described by claim 9~~ wherein each of said independent increments of filler material is separated from adjacent increments.

11. (currently amended) A side pocket mandrel as described by claim 10 ~~9~~ wherein each of said independent increments of filler material is welded to a tube wall enclosing said inner volume.

12. (currently amended) A side pocket mandrel as described by claim 10 ~~9~~ wherein said filler material is aligned in substantially parallel rows on opposite sides of said workspace channel.

13-14. (cancelled)

15. (Previously Presented) A side pocket mandrel as described by claim 5, wherein said filler material comprises a plurality of guide sections.

16. (Previously Presented) A side pocket mandrel as described by claim 5 further comprising a cylinder bore enclosure positioned in said inner volume.

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17. (Previously Presented) A side pocket mandrel as described by claim 16, wherein at least one of said guide sections is positioned axially below said cylinder bore enclosure.

18. (currently amended) An apparatus for insertion into a tubing string disposed in a wellbore, comprising:
(a) a tubular body having an enlarged diameter section, the enlarged diameter section generating turbulent flow when a working fluid flows therethrough, a filler material positioned in the enlarged diameter section having one or more transverse jet channels formed to induce the turbulent flow.

19. (Previously Presented) The apparatus of claim 18 wherein the turbulent flow substantially flushes a residual cement out of said enlarged diameter section.

20. (Previously Presented) The apparatus of claim 18 wherein the enlarged diameter section cooperates with a plug pushed by the working fluid to displace cement out of the enlarged diameter section.

21. (Previously Presented) The apparatus of claim 19 further comprising a mass object positioned within said enlarged diameter section that guides said plug therethrough.

22. (Previously Presented) The apparatus of claim 19 further comprising a valve housing formed within said enlarged diameter section.

23. (Previously Presented) The apparatus of claim 22 wherein the enlarged diameter section includes a channel for insertion of a valve element into said valve housing.

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24. (Previously Presented) The apparatus of claim 18 wherein the enlarged diameter section has an interior volume that includes a surface discontinuity that induces the fluid flow turbulence.

25. (Previously Presented) The apparatus as described by claim 24 wherein said surface discontinuity includes one of (i) surface upsets, (ii) indentations, and (iii) transverse jet channels.

26. (Previously Presented) The apparatus as described by claim 24 wherein said surface discontinuity is formed in a filler positioned in said enlarged diameter section.

27. (currently amended) A production string producing a fluid from a wellbore drilled in a subterranean formation, comprising:

(a) a production tube adapted to be at least partially cemented in the wellbore; and

(b) at least one mandrel positioned along said production tubing, the mandrel having an enlarged diameter section ~~generating turbulent flow when a working fluid flows therethrough~~, a filler material positioned in said inner volume, said filler material preventing cement from occupying a substantial volume within said inner volume while also allowing placement of a valve element, wherein said filler material comprises a plurality of independent increments and wherein each of said independent increments of filler material is separated from adjacent increments.

28. (Previously Presented) The production string of claim 27, wherein the at least one mandrel includes an upper and a lower assembly joint each

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having a diameter smaller than a diameter of the enlarged diameter section, said upper and lower assembly joints separated by a length selected to maintain a pressure on a plug traveling through said mandrel.

29. (Previously Presented) The production string of claim 28 further comprising a guide positioned in said mandrel, said guide keeping said plug within a primary flow bore axis of said mandrel.

30. (currently amended) The production string of claim 28 ~~27~~ further comprising a guide positioned in said mandrel, said guide keeping said plug within a primary flow bore axis of said mandrel.

31. (Previously Presented) The production string of claim 27 wherein said enlarged diameter section includes a channel for insertion of a valve element into said valve housing.

32. (Previously Presented) The production string of claim 27 wherein said enlarged diameter section has an interior volume that includes a surface discontinuity that induces the fluid flow turbulence.

33. (Previously Presented) The production string of claim 27 wherein said surface discontinuity includes one of (i) surface upsets, (ii) indentations, and (iii) transverse jet channels.

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